

REMARKS

This paper is responsive to any paper(s) indicated above, and is responsive in any other manner indicated below.

CLAIM FOR PRIORITY

As listed within the "Priority" section on page 2 of the Office Action, enclosed please find a stamped postcard receipt evidencing filing of such certified copy of 2003-344422 as required by 35 U.S.C. 119(b).

PENDING CLAIMS

Claims 1-14 were pending, under consideration and subjected to examination in the Office Action. Appropriate claims have been amended, canceled and/or added (without prejudice or disclaimer) in order to adjust a clarity and/or focus of Applicant's claimed invention. That is, such changes are unrelated to any prior art or scope adjustment and are simply refocused claims in which Applicant is presently interested. At entry of this paper, Claims 1-8 and 10-18 will be pending for further consideration and examination in the application.

CLAIM OBJECTIONS OBVIATED VIA CLAIM AMENDMENT

Claims 4-8 and 10-14 have been objected to because of the Office Action concerns listed within the "Claim Objections" section on page 2 of the Office Action. As amendments have been made where appropriate in order

to address each of the Office Action listed concerns, reconsideration and withdrawal of the claim objection are respectfully requested.

ALL REJECTIONS UNDER 35 USC '102 - TRAVERSED

All 35 USC rejections (i.e., the 35 USC '102 rejection of claims 1-3 and 9 as being anticipated by Mizuno et al. (U.S. Patent 5,876,325)) is respectfully traversed.

All descriptions of Applicant's disclosed and claimed invention, and all descriptions and rebuttal arguments regarding the applied prior art, as previously submitted by Applicant in any form, are repeated and incorporated hereat by reference. Further, all Office Action statements regarding the prior art rejections are respectfully traversed. As additional arguments, Applicant respectfully submits the following.

In order to properly support a '102 anticipatory-type rejection, any applied art reference must disclose each and every limitation of any rejected claim. The applied art does not adequately support a '102 anticipatory-type rejection because, at minimum, such applied art does not disclose (or suggest) the following discussed limitations of Applicant's claims.

Applicant's disclosed and claimed arrangements are directed toward more precise remote-controllable arrangements (e.g., operation input units, telecontrol systems/methods). That is, Applicant's disclosed and claimed arrangements (e.g., independent claim 1) include "**a first movement detection unit** for detecting the **position and/or attitude** of a first operation

input unit, wherein the first movement detection unit has at least three degrees of freedom; and a second movement detection unit, connected to the first movement detection unit, for detecting the position and attitude of a second operation input unit, wherein the second movement detection unit has six degrees of freedom.” Applicant’s dependent claim 15 recites “wherein the first movement detection unit has a first sensor configuration to afford the at least three degrees of freedom, and wherein the second movement detection unit has a second sensor configuration to afford the six degrees of freedom.” Dependent claim 16 recites that the sensor configurations are “a plurality of sensors”, while dependent claim 17 specifies “wherein the first sensor configuration has five sensors to afford the at least three degrees of freedom, and wherein the second sensor configuration has six sensors to afford the six degrees of freedom.” Still further, dependent claim 18 recites “wherein the at least three degrees of freedom and the six degrees of freedom are independently detectable, by the first movement detection unit and the second movement detection unit.”

Turning now to rebuttal of the Mizuno et al. reference, it is noted that Mizuno et al.’s “manipulators” (i.e., robotic arms) appear to contain only one (or a limited number) of encoders (e.g., 12; FIG. 1). As such, Mizuno et al.’s arrangement would not have disclosed (or suggested) Applicant’s specifically-claimed arrangements, which have “at least three” and “six” degrees of freedom, and have the further particulars as detailed above.

In addition to the foregoing, the following additional remarks from Applicant's foreign representative are also submitted in support of traversal of the rejection and patentability of Applicant's claims.

Regarding a comparison between Applicant's invention and US 5,876,325 (Mizuno), in Mizuno, only the manipulation by fingers are inputted (i. e., detected), and the manipulation by a hand (i. e., wrist) is not inputted (i. e., detected). To be specific, the manipulation in which the operator moves his/her hand and the manipulation in which the operator moves his/her fingers, are inputted as the same operation.

Further, Line 5 of the "Abstract" section of US 5,876,325 describes that the detector detects a position and/or orientation relationship between the surgical device and the guide, and/or a position and/or orientation relationship between the surgical device and another surgical device. However, by referring to Figs. 1 and 3 of US 5,876,325, only one encoder 12 exists, so the information on which both the position and the orientation of the TCP of Fig. 3 are intermingled, is detected. In other words, when the operator grips the manipulator 19 as shown in Fig. 1 and moves his/her hand, the information on which both the position and the orientation of the TCP are intermingled, based on the movement of the hand, is detected.

Thus, according to the technique as disclosed in US 5,876,325, as the information to be inputted for operating the instruments 9 and 10, the information including the position and the orientation can be obtained. However, based on the information in which the position and the orientation

are intermingled, the instruments 9 and 10 are operated, so, in some cases, the instruments 9 and 10 are operated by an operation which is not intended by the operator.

In contrast, Applicant's invention is characterized in that the position and the attitude are separately detected by using two detection units, and it is possible to obtain a remarkable effect of "preventing a state where the unintended changes in position and attitude are intermingled in the operation information, thereby making it possible to prevent the occurrence of the unintended movement".

To be specific, the position information detected by the second movement detection unit of this invention represents a redundant degree of freedom for enhancing the operability. Further, the position information detected by the second movement detection unit is used for eliminating the displacement amount from the position information detected by the first movement detection unit.

For example, when the operator controls the attitude of the second operation input unit, the position of the second operation input unit changes in some cases. The unintended position change of the second operation input unit is detected by the second movement detection unit. By subtracting the position change of the second operation input unit, only change in the attitude of the second operation input unit is extracted.

As a result, the information on the position and the information on the attitude can be separated. The first operation input unit serves for inputting

the position and the second operation input unit serves for inputting the attitude. Accordingly, the state where the unintended changes in position and attitude are intermingled in the operation information is prevented, thereby preventing the occurrence of the unintended movement.

The invention according to US 5,876,325 will be described in more detail.

The master manipulators 16 and 17 in the description of the US 5,876,325 each has a link shape. According to the movement of portions gripped by the operator, the shape of each of the links of the master manipulators 16 and 17 changes. Thus, the position and the attitude of the TCPs are calculated in a collective manner as coordinate data with six degrees of freedom.

In Lines 14 to 17 of Column 9 indicated by the Examiner in the Office Action, there is only a description that the links are connected to each other via the joint obtained by integrating the motor and the encoder with each other. Thus, Applicant considers that the above-mentioned part is not relevant to this invention.

For the sake of precaution, Applicant's comments will be given on Fig. 25A of US 5,876,325. That is, Fig. 25A shows a view in which a portion operated by a head and a portion operated by fingers exist. However, the portion operated by a head controls an endoscope (i. e., 3D scope 155), while the portion operated by fingers controls the instruments 156 and 157, so Fig. 25A of US 5,876,325 is not relevant to this invention.

As a result of all of the foregoing, it is respectfully submitted that the applied art would not support a '102 anticipatory-type rejection of Applicant's claims. Accordingly, reconsideration and withdrawal of such '102 rejections, and express written allowance of all of the rejected claims, are respectfully requested. Further, at this point, it is respectfully submitted as a reminder that, if new art is now cited against any of Applicant's unamended claims, then it would not be proper to make a next action final.

EXAMINER INVITED TO TELEPHONE

The Examiner is herein invited to telephone the undersigned attorneys at the local Washington, D.C. area telephone number of 703/312-6600 for discussing any Examiner's Amendments or other suggested actions for accelerating prosecution and moving the present application to allowance.

RESERVATION OF RIGHTS

It is respectfully submitted that any and all claim amendments and/or cancellations submitted within this paper and throughout prosecution of the present application are without prejudice or disclaimer. That is, any above statements, or any present amendment or cancellation of claims (all made without prejudice or disclaimer), should not be taken as an indication or admission that any objection/rejection was valid, or as a disclaimer of any scope or subject matter. Applicant respectfully reserves all rights to file subsequent related application(s) (including reissue applications) directed to

any/all previously claimed limitations/features which have been subsequently amended or cancelled, or to any/all limitations/features not yet claimed, i.e., Applicant continues (indefinitely) to maintain no intention or desire to dedicate or surrender any limitations/features of subject matter of the present application to the public.

CONCLUSION

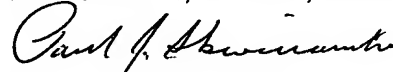
In view of the foregoing amendments and remarks, Applicant respectfully submits that the claims listed above as presently being under consideration in the application are now in condition for allowance.

To the extent necessary, Applicant petitions for an extension of time under 37 CFR '1.136. Authorization is herein given to charge any shortage in the fees, including extension of time fees and excess claim fees, to Deposit Account No. 01-2135 (Case No. 1213.43376X00) and please credit any excess fees to such deposit account.

Based upon all of the foregoing, allowance of all presently-pending claims is respectfully requested.

Respectfully submitted,

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